LAW OFFICES

ROSS & HARDIES

A PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

888 SIXTEENTH STREET, N.W.

WASHINGTON, D.C. 20006-4103

202-296-8600

TELECOPIER
202-296-8791

150 NORTH MICHIGAN AVENUE
CHICAGO, ILLINOIS 60601-7567
312-558-1000

PARK AVENUE TOWER
65 EAST 55TH STREET
NEW YORK, NEW YORK 10022-3219
212-421-5555

580 HOWARD AVENUE
SOMERSET, NEW JERSEY 08875-6739
908-563-2700

STEPHEN R. ROSS

January 25, 1994

HAND-DELIVERED

William F. Caton
Acting Secretary
Federal Communications Commission
Room 222
1919 M Street, N.W.
Washington, D.C. 20554

Re: Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992
Compatibility Between Cable Systems and Consumer Electronics Equipment
ET Docket No. 93-7 -- FCC No. 93-495

Dear Mr. Caton:

Enclosed on behalf of InterMedia Partners, ML Media Partners and ML Media Opportunity Partners, are the original and four copies of Summary Comments to be filed in the above-referenced proceeding.

Please address any questions concerning these Comments to the undersigned.

Cordially,

Stephen Ross /KH

Stephen R. Ross

SRR/sdb
Enclosures

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

In the Matter of:	)	
	)	
Implementation of Section 17 of the Cable	)	ET Docket No. 93-7
Television Consumer Protection and	)	
Competition Act of 1992	)	FCC No. 93-495
	)	
Compatibility Between Cable Systems and	)	
Consumer Electronics Equipment	)	

SUMMARY COMMENTS

InterMedia Partners, ML Media Partners and ML Media Opportunity Partners (Joint Filers) respectfully comment in response to the above referenced Notice of Proposed Rule Making. Joint Filers generally support the approach proposed by the Commission in the NPRM and also support the consumer electronics/cable inter-industry filing with respect to the technical requirements for cable-ready receivers.

To help create a complete record in this proceeding, Joint Filers, as part of these comments, submit the extensive study done by CableLabs into the matters raised by the NPRM. We believe that this comprehensive work shows that the performance goals jointly agreed upon by the consumer electronics and cable industries are necessary, realistic and attainable.

Most consumers (and the retailers who serve them) regard extended tuning range and "cable-ready" as being synonymous. Since the only use of the extended tuning range is for direct connection to cable systems, continued production of non-conforming, but extended tuning range, equipment should be forbidden to avoid frustrating Congress' intentions. Alternatively, we suggest that the promotion of that tuning capability be banned as being tantamount to "implying that the equipment is meant for connection to cable service" which is the Commission's suggested criterion for triggering mandatory "cable-ready" performance criteria. A less desirable third alternative would be to require that non-conforming extended-tuning-range equipment be labelled to warn potential purchasers that it might not work properly when directly connected to a cable system. Regardless of other regulations related to non-conforming, extended tuning range receivers, Joint Filers strongly recommend that the Commission enforce those cable-ready provisions which prevent interference to other subscribers.

Finally, Joint Filers support the Commission's stated intention to standardize digital transmission on cable systems. We suggest steps that can be taken to encourage the early introduction of this new technology, preserve cable operator's rights to control access to its programming, and allow most digital circuitry to migrate into advanced television receivers.

TABLE OF CONTENTS

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

In the Matter of:	)	
	)	
Implementation of Section 17 of the Cable	)	ET Docket No. 93-7
Television Consumer Protection and	)	
Competition Act of 1992	)	FCC No. 93-495
	)	
Compatibility Between Cable Systems and	)	
Consumer Electronics Equipment	)	

COMMENTS OF JOINT FILERS

InterMedia Partners, L.P., ML Media Partners, L.P. and ML Media Opportunity Partners, L.P., together operators of cable systems serving over 900,000 subscribers in 13 states (hereafter "Joint Filers"), hereby respectfully submit their comments in response to the above referenced Notice of Proposed Rule Making in ET Docket No. 93-7, FCC No.93-495, released December 1, 1993, (hereafter "NPRM").

INTRODUCTION

In the NPRM, the Commission proposes a multifaceted approach to dealing with the existing base of installed equipment, new equipment, and the eventual introduction of digitally encoded television programming. Joint Filers support the general regulatory approach proposed by the Commission. Two of InterMedia Partner's employees are active participants on the Cable/Consumer Electronics Advisor Group (hereafter "CAG") and the EIA/NCTA Joint Engineering Committee (hereafter "JEC") and have been involved in developing the joint industry positions on the various compatibility issues. Thus, Joint Filers support the joint filing of those inter-industry groups in this rulemaking with respect to the characteristics that a receiver should

have in order to be identified or marketed as "cable-ready." Those agreements represent a realistic balance between assuring reception free from objectionable interference and limiting the incremental cost necessary to produce a truly "cable-ready" receiver.

Finally, Joint Filers will discuss several issues raised by the NPRM which are beyond the scope of the inter-industry agreement.

CUSTOMER PREMISES EQUIPMENT: THE CABLELABS REPORT

Included with this filing is an extensive study sponsored by CableLabs in an attempt to quantify many of the issues raised in the NPRM with regard to performance of receivers. It is entitled *Customer Premises Equipment Performance and Compatibility Testing*. The work was done by experts in several fields. The contents are summarized below.

Direct Pickup Interference

The most serious receiver performance deficiency is inadequate shielding, which allows its internal circuitry to pick up off-air signals which then interfere with signals received from the cable system. In order to set a reasonable standard for the shielding required, it is necessary to know the strengths of the fields in which receivers are immersed, to have a repeatable methodology for measuring susceptibility, to understand performance of current receivers, and finally, to determine the level of interference that customers find acceptable. The report addresses all of these issues.

- Characterization of the RF Environment, a study by Stern Telecommunications Corporation, uses both field measurements and a study of predicted field strengths and

receiver locations to predict the exposure of receivers to various levels of external field strengths from both VHF and UHF television broadcasting stations. In summary, the study predicts that 40.8% of television households will experience a field strength of at least 100 mV/meter (100 dBμ), while 6% will experience field strengths of at least 1 V/meter. The study did not include non-television RF sources (such as paging equipment and two-way communication radios) which are also a frequent cause of ingress interference.

A separate study by Carl T. Jones examines possible factors that may affect the field strength actually experienced by a receiver relative to the amplitude predicted by Stern. In summary, Jones found that the strength could vary by ±13 dB as a function of the height of the receiver (with the lower levels in first floor locations and the higher levels in high-rise apartments), by 0 to -12.5 dB in first-floor suburban homes due to building attenuation (but with decreasing shielding as a function of receiver height in multi-story buildings), and by 0 to -4 dB due to urban clutter in dense areas.

- Development of Test Procedures. Carl T. Jones proposes test procedures which will allow the quantitative measurement of shielding effectiveness of receivers. These procedures have been reviewed by JEC engineers and are believed to be close to acceptance by both cable and CE industries.

- Characterization of Current Production Receivers. Using the proposed procedures, Carl T. Jones tested a representative sample of television receivers, VCRs and cable converters furnished by the manufacturers for that purpose (as well as a number purchased from local dealerships). It should be noted that nearly all of the cable converters tested

met the shielding standard proposed by CAG, indicating that the proposed standard is within the realm of commercial practicality.

- Consumer Tolerance of Interfering Carriers. The Commission has, in general, proposed a standard of "just perceptible" interference in discussing receiver signal degradation. For signals which are not frequency coherent (such as UHF broadcast stations), the National Association of Broadcasters and CBS have previously found that level to be 58 to 63.5 dB below the desired signal when the interfering carriers were near the luminance or chroma carriers, and somewhat less at intermediate frequencies. In this new study, Bronwen Jones, repeats the earlier CBS/NAB measurements of subjective degradation, but also measures the subjective masking effect of noise at both the -50 dB level (corresponding to an average cable subscriber in a modern system) and at a level of -43 dB (corresponding to the worst acceptable level under the FCC's technical rules as of June, 1995[1].) Her measurements confirm 55 dB carrier-to-interference ratio as a good approximation to "just perceptible" interference.

Tuner Performance

Aside from shielding against ingress, many characteristics of receiving equipment can potentially degrade both the user's reception and that of other subscribers and non-subscribers. Specifically:

- Inadequate shielding can also allow cable input signals to radiate from a receiver's internal wiring in excess of the limits allowed under §76.605(a)(12).

---

[1]47 C.F.R. §76.605(a)(7).

- Leakage out the antenna port of signals generated within the receiver (or picked up by the receiver's wiring due to inadequate shielding) can interfere with reception of other cable subscribers.
- Limited isolation of antenna selector switches can lead to
  - Radiation of the cable signals from the customer's antenna
  - Antenna-received signals interfering with customer's reception
  - Antenna-received signals interfering with reception at neighboring cable customers.
- Image response can cause interference to customer's reception.
- Tuner overload can cause second and third order beat products to be generated which will interfere with the customer's reception.
- Excessive loss in such devices as VCRs can cause noisy reception in downstream receivers.
- Inadequate rejection of adjacent channels can cause in-channel beat products which will interfere with the customer's reception.

These issues are all raised in the NPRM. In the section of the report entitled *Receiver Performance*, Carl T. Jones has suggested test procedures for all of these parameters. At this time, these procedures are under consideration by the appropriate JEC subcommittee.

Bronwen Jones' work characterizing subscriber's perception of picture quality is equally applicable to these other interference mechanisms.

As a test of the validity of the procedures, as well as to characterize the state of current production receivers, Carl T. Jones has also included test results on several television receivers, VCRs and converters. As with shielding effectiveness, it should be noted that nearly all the

converters tested met nearly all of the performance criteria proposed by CAG/JEC, indicating that the tuner requirements are not unduly burdensome.

THE JOINT AGREEMENT

The negotiations that have taken place in the past several months in the CAG (and for many years in the JEC) in attempting to reach a common understanding on what "cable-ready" means have carefully balanced the potential incremental cost of such receivers against the benefit gained. It was recognized by both parties that specifying performance standards that would offer essentially perfect reception on every channel in every cable system all the time would result in gross over-specification and unacceptable cost. The negotiators, instead, tried to reach agreements that would result in acceptable reception for the vast majority of cable customers at an acceptable incremental cost. As part of that agreement, and in recognition of unavoidable production variables, the JEC has suggested a standard which states that 95% of production receivers must meet each specification. Joint Filers agree and feel that this is the optimum cost/benefit ratio for the consumer, providing manufacturers are obligated to correct field problems that result from non-conforming equipment.

With respect to the decoder interface connector, it was not possible to reach agreement on all the details of the improved interface. Joint Filers agree with the CAG that the suggested improvements to the already-released ANSI/EIA 563 interface standard are worth the wait. In particular, the ability to accommodate all current analog scrambling methods plus allow a transition to digital without immediately re-creating a requirement for set-top boxes is a worthwhile improvement to the existing standard.

NON-CONFORMING EQUIPMENT

The proposed rules do not address the problem of possible continued production of extended tuning range receivers which do not meet the requirements for "cable-ready" equipment. It must be pointed out that ***the only reason for providing the ability to tune the cable-exclusive channels is to allow direct connection to a cable system***. Other delivery systems (DBS, MMDS and, potentially, video dial tone) all interface to the receiver at either a standard VHF television channel or directly at video. Joint Filers feel that it defeats the entire purpose of defining required receiver performance for cable operation if manufacturers are allowed to continue to produce non-conforming receivers with extended-range tuners.

Potential television and VCR purchasers typically "test" the equipment in a showroom where the equipment is connected to a single channel or broadcast signal source, and therefore have no way of judging the equipment's capability in a full cable environment. In fact, it is likely that true cable-ready sets and cheaper "regular" sets will perform similarly in the showroom, given the limited signal source. Therefore, it is also likely that many consumers will select "regular" receivers when they make their buying decision because of price. The best way to guide consumers toward the correct equipment for their situation (cable *vs* off-air) would be to limit non-cable-ready sets to standard VHF/UHF tuners.

While it might be argued that the presence of decoder interface connectors (if purchasers are aware of them and their significance) may be a factor guiding consumers to cable-ready receivers, it should be pointed out that, to the extent that the Commission is successful in encouraging operators to use delivery techniques such as traps, that will not be a factor.

However, should the Commission feel that the outright prohibition of extended-tuning-range, but not cable-ready, receivers is beyond the scope of its authority under the Cable Act of 1992[2], then Joint Filers suggest that measures must be taken to assure that potential purchasers of receivers receive clear information on which to base their buying decision. As the Commission has noted,

> ***. . . there appears to be confusion on the part of consumers about whether, and the extent to which, equipment is "cable ready" or "cable compatible."*** [3]

In particular, Joint Filers are concerned that, in the minds of most potential purchasers and local retailers, the term "cable-ready" is synonymous with the ability to directly tune the cable-exclusive channels. We note that in its *Report to the Congress*[4], the Commission proposed to apply the new standards to

> ***. . . all consumer electronics equipment that is marketed as "cable-ready" or with other marketing terms intended to imply that the equipment is meant for connection to cable service.***

We applaud this recognition that it is not the precise term "cable-ready" that is important, but the broader implication of being suitable for direct connection to a cable system. Given the confusion between tuning range and true compatibility, Joint Filers suggest that advertising, specification or promotion of tuning range beyond the broadcast channels cannot be interpreted

---

[2]*Cable Television Consumer Protection and Competition Act of 1992*, Pub. L. No. 102-385, 106 Stat. 1460 (1992).

[3]NPRM, page 2, paragraph 3.

[4]*Consumer Electronics and Cable System Compatibility: Report to the Congress*, Federal Communications Commission, October 1993, page 65.

in any other way than "implying that the equipment is meant for connection to cable service" and must be forbidden. Moreover, as a ***minimum*** means of allowing potential purchasers of receiving equipment to make informed choices, we request that the Commission require that TVs and VCRs which are capable of tuning cable-exclusive channels but which do not meet the performance criteria for a cable environment be prominently labeled, preferably with a sticker on the front of the display tube or on the face of the VCR, warning buyers that the equipment may not function properly when connected to a cable system. We suggest the following language:

> Notice: This device does not meet the requirements established by the Federal Communications Commission for equipment designed to work properly when attached to a cable television system.

Finally, Joint Filers wish to point out that, while some of the specifications for cable-ready equipment affect the quality of reception afforded the purchaser, others prevent the receiver from affecting the cable network and, in particular, the reception of other subscribers. While it has been argued that consumers should have the option to purchase equipment which may offer inadequate reception, in order to assure low prices, the Commission must take steps to insure that such equipment does not harm the operation of the network to which it is attached[5]. Therefore, Joint Filers strongly recommend that the specifications regarding all emissions conducted back into the cable system (Local Oscillator Leakage, DPU signals, and Antenna Selector Switch Isolation) plus the specification on re-radiation of cable signals be met by <u>all</u> extended tuning

[5]This is consistent with its approach to telephone equipment which may offer inferior performance and reliability, but is still required to meet the standards of 47 C.F.R §68 at its interface with the telephone system.

range receivers, just as the current Part 15 rules on spurious emissions[6] must be met by all broadcast receivers, regardless of their other features.

CONVERTERS

The NPRM proposes applying the tuner performance criteria to converters, as well as television receiver and VCRs[7]. Joint Filers support that inclusion. Given that a converter connected ahead of a broadcast television receiver is, in effect, a "cable-ready" receiver (as the term is generally understood), it is logical to require that its tuner perform as well as any other "cable-ready" device. Thus shielding, tuning range, channelization and all other performance criteria should apply to converters since ***deficiencies in those parameters have the same potential for degrading reception at both the subscribers premise and neighboring receivers***.

Since all cable converters are marketed with the clear intent of being suitable for connection to cable service, the "cable-ready" performance requirements should apply to all such devices.

Therefore, throughout this document, the term "receiver" is intended to apply to converters, as well as TVs and VCRs.

---

[6] 47 C.F.R §15.63

[7] ***"We are also proposing to apply these performance and testing requirements to cable system terminal devices***"; NPRM, page 12, paragraph 23. Cable system terminal devices are further defined as ***"TV interface devices that serve, as their primary function, to connect a cable system to a TV receiver or other subscriber premise equipment.***" This definition includes cable converters.

DETAILED RESPONSE TO NPRM ISSUES

The following remarks are keyed to specific issues raised in the NPRM. Where comments on specific performance criteria were requested, Joint Filers agree with the joint filing of the CAG and JEC unless otherwise stated.

Paragraph 12: Proposals for Existing Equipment

Joint Filers, in general, agree with the proposed approach to dealing with the installed base of receivers. We believe, as suggested in the NPRM, that such accessory equipment, if furnished by cable operators, should be charged on the same basis as other terminal equipment. We suggest, however, that the language relating to delivery of unscrambled programming ". . . ***without passing through the set-top device***. . ." be clarified as many set-top converters have internal bypass switches which satisfy the intent of the proposed requirement, but which, technically, require the signal to pass "through" the box. We suggest that the above quoted phrase be dropped as it may be confusing.

Paragraph 13: Scrambling of Basic Tier Services

The motive to steal cable services is, logically, proportional to the desirability of the stolen programming. Joint Filers do not oppose a requirement to carry local broadcast signals in unscrambled form. Extending that requirement, however, to optional programming that may be carried as part of the Basic service will tend to make operators carry little of perceived value in the lowest tier in order to preserve their options to protect their product. We believe that this will work to the disservice of the customer and operator alike.

With respect to public, educational and governmental programming (PEG), we agree with the requirement that such programming ***which is intended for reception by a general audience***, be carried in the clear. We wish to point out, however, that PEG channels are often used to carry programming that is not intended for general reception. Examples are use of the government channels for training films for fire fighters, or use of the educational channel for teacher training, or to carry specialized classes intended for a limited audience. In order to preserve such public-benefit uses of PEG channels, we request that the Commission clarify that only PEG programming intended for the general public need be carried in the clear.[8]

Paragraph 16: Consumer Education on Third Party Remote Control Units

Joint Filers do not object to informing customers of the availability of remote control units from retail sources, but question their ability to ascertain all such controls available and all stores which may carry such units. Such devices have become commodity items, often selling for under $10 and, like most low-cost consumer items, new models and sources appear so quickly that it would be almost impossible to track. In the San Francisco Bay Area, for instance, remote controls are available from department stores, television and electronics dealers, hardware stores and other outlets. The San Jose telephone book, one of several regional phone books, lists seven pages of television dealerships alone.

In light of these realities, Joint Filers suggest that the most effective way Congress' intent in this area can be achieved is by requiring cable companies to provide a list of several remote

---

[8]InterMedia carries some scrambled governmental programming on its cable system in Santa Clara, California.

controls which will work with the system's converters as well as the names of several retailers that carry such remotes. Any requirement that these lists include all such remotes and/or retailers will be unworkable in many instances.

Paragraph 19: Channelization Plan

Joint Filers agree that mutual adherence to the EIA 542 (formerly IS-6) channelization plan, as modified, is a fundamental part of achieving compatibility. We suggest, however, that it be made clear that the required channelization ***only apply to signals intended for reception by cable-ready receivers***. The reason for this clarification is that cable systems now and in the future may carry many signals (including analog video teleconferencing, for instance) not intended for reception by television receivers.

Paragraph 20: Decoder Interface Connector

As stated above, Joint Filers support the efforts of JEC to improve upon the current ANSI/EIA 563 standard. While we feel that the current standard is workable, we believe that the revisions contemplated (particularly the addition of an unshaped intermediate frequency output port) will result in a wider deployment and provide an upgrade path to digital.

Paragraph 23: Various Tuner Requirements

With respect to radiated emissions, the JEC has proposed, and Joint Filers support, the suggestion that the relevant specification for re-radiation of cable signals from the internal wiring of receivers be the limits of §76.605(a)(12), rather than existing Part 15 limits. Since cable

systems are held to Part 76 signal leakage limits, so must individual components of the total system (including directly connected receivers). The tests done by Carl T. Jones as part of the CableLabs publication submitted with these comments indicate that ingress is a linear phenomenon, so that testing is only required at the maximum probable input signal level. Joint Filers agree with the JEC that in most cases this will be +15 dBmV. Given that ingress and egress are related phenomena, we believe that, so long as ingress is tested over the entire frequency range, it is sufficient to test egress on a few channels (including the lowest and highest) distributed across the frequency range.

With respect to image rejection, the Commission has suggested that solving the DPU problem will also solve image problems. Joint Filers (and the JEC) respectfully disagree. While rejection of off-air image signals is a function of shielding, rejection of cable image signals is a function of the design of the input mixers, amplifiers and filters of the receiver and should be separately specified, as the JEC has done.

With respect to antenna selector switch isolation, Joint Filers feel that the JEC-proposed specification of 55 dB isolation between 550 MHz and 1002 MHz is marginal, as it provides "just perceptible" interference protection only if the input signal are exactly matched, an unlikely event. We believe, however, that the JEC proposal is based on the incremental cost of providing higher isolation, and that average isolation in production receivers will have to exceed the standard by a substantial amount in order to assure a 95% compliance level. For that reason, Joint Filers support the JEC proposal.

Paragraph 29: Acceptable Signal Formats

Joint Filers agree with the general approach of requiring cable operators to use either in-the-clear technology or offer consumers set-back decoders. As operators of many small cable systems, however, we are concerned with the burden of replacing in-place scrambling systems for which we may not be able to acquire set-back decoders. In several cases these units are fully functional, but are no longer in production. Replacing the entire scrambling system would be prohibitively expensive, while abandoning it in favor of traps would be expensive and remove customer's access to easy changes in programming level and all pay-per-view programming options. In either case, we suggest that the benefits gained in consumer interface convenience would be more than outweighed by the cost of compliance. Joint Filers suggest a ten year phase-in period. This would allow existing, non-complying scrambling hardware to be fully depreciated before requiring its replacement, and is consistent with the commission's proposal on channelization in Paragraph 31.

Paragraph 30: Charges for Set-Back Decoders

Joint Filers agree with the Commission's stated intent in encouraging subscribers to purchase receivers which utilize set-back decoders as a means of assuring long-term compatibility. However, we respectfully submit that the transparency of the set-back device is sufficient incentive for its purchase and that requiring the cable industry to subsidize the use of this equipment through the provision of free set-back decoders is unnecessary and bad public policy. Moreover, the current formulas used to compute benchmark rates for regulated tiers of service do not include the value of the general cable network in the calculation, and it is unclear

how the incremental investment will be recovered by the operator, unless all operators elect cost-of-service regulation[9]. Provision of the decoders at "actual cost" should provide adequate consumer protection.

Finally, the provision of "free" decoders will become a severe economic burden when digital decoders become necessary. Unlike analog decoders, where set-back units are expected to cost less than set-top units (because of the elimination of duplicate circuitry), digital set back devices will be expensive and cost approximately the same as their set-top equivalents. The reason is that the tuner circuitry is a small part of the cost of a digital decoder and, in the embryonic state of digitally compressed programming, the cost of the basic demodulation/demultiplexing/descrambling/de-compressing hardware is very high, approximately $300. In order to avoid stifling this new signal delivery means, we suggest that they be leased at a rate that is consistent with the formula for existing analog set-top converter/decoders.

Paragraph 31: Channelization

The newly-revised extension of IS-6 (now identified as EIA 542) does not define the multiplexing of digitally compressed channels within a 6 MHz channel. We believe that it is premature to specify that parameter. The Commission has stated an intention to standardize digital transmission formats and we respectfully suggest that the appropriate time to further define channelization beyond the basic 6 MHz blocks of spectrum defined in EIA 542 should be after transmission standards are set. So long as the Commission is willing to allow sub-channelization

[9]Since the cost of service rules have not been issued, it is not clear at present how such costs would be recovered under this option either.

on an unregulated basis, in the interim, we do not see an impediment to introduction of digitally compressed signals.

Paragraph 34: Digital Standards

Converting an analog video signal to compressed, digital form requires several steps:

1. Digitizing the analog signal for processing
2. Compressing the digital signal to as low a bit rate as possible while retaining essential picture information.
3. Scrambling the resultant bit stream to provide security against theft.
4. Multiplexing the scrambled bit stream of one program with other digital program bit streams into a single data stream.
5. Adding error correction to the multiplexed data stream.
6. Modulating the bit stream onto an RF carrier for transmission.

Of these steps, all except scrambling could logically be standardized and eventually be included in consumers' receivers. Hopefully, the eventual standard will have many common elements with the emerging Advanced Television standard, so that common processing elements will be usable for both compressed NTSC and ATV. We believe that the schedule proposed by CAG is appropriate and will coincide with the development of this technology, as well as international standardization efforts already underway.

Joint Filers strongly suggest that the Commission not attempt to standardize scrambling (step 3 above). If scrambling were standardized and security were controlled by "keys" contained in "smart cards", for instance, it would be virtually impossible to change out descramblers if the

system were compromised[10]. Even lacking a "break" in the basic scrambling system, operators would be faced with the continuing expense of new "smart cards".

The descrambling hardware itself represents only a small percentage of the cost of the digital receiving process, so little will be saved by moving it inside each receiver. Aside from the stupendous risk associated with selling consumer equipment with descrambling circuitry built in, smart cards themselves have proven to be of limited security. In Europe, where smart card technology is utilized for satellite decoders, breaches of security are common and suppliers have to distribute new cards on a frequent and regular basis.

CONCLUSION

Joint Filers support the balanced approach the Commission has proposed to assure the best interface between cable systems and consumer electronics equipment. We also support the efforts of the JEC and CAG in reaching agreement on the technical aspects of the consumer equipment interface. We commend the CableLabs study to the Commission as the most complete and scholarly study to date on performance of existing receivers, the general signal environment within which they operate, customer expectation of signal quality, and test procedures for quantifying performance measurements.

We are particularly concerned that the intent of Congress and the FCC in assuring future compatibility will be thwarted if manufacturers are allowed to continue to manufacture non-

---

[10]When the first Videocipher was introduced, the scrambling process was described as "unbreakable." Not only was the scrambling scheme "broken" in a matter of months, but chips were quickly developed which fully authorized a Videocipher when installed in place of the original component.

conforming equipment which is, by virtue of its tuning capability, manifestly intended for direct connection to cable systems. Our strong recommendation is the outright ban on selling of such equipment in the future. If its production is not prohibited, then we request that the FCC forbid any promotion of its extended tuning capability as that is a means of "implying that the equipment is meant for connection to cable service," which the Commission has proposed as a standard for triggering the new performance criteria. We also suggest clear product warnings on non-conforming equipment which will allow potential purchasers to make informed choices. In any case, we strongly recommend that any extended tuning range receiver conform with those specifications which prevent interference to other receivers or excessive re-radiation of cable signals when connected to the network.

With respect to the coming introduction of digitally compressed programming, we recommend that the Commission encourage this still-emerging technology while studying future consumer-interface issues. Specifically, we recommend that

A. Cable operators be allowed to charge for digital descramblers on an "actual cost" basis, whether set-top or set-back.

B. The Commission proceed with the standardization of compression and modulation formats for digital signals in cooperation with the CAG and JEC, but that digital scrambling be left unregulated to protect cable operators' ability to fully control access to their product.

Respectfully Submitted,

InterMedia Partners, L.P.

By: David G. Rozzelle /sm
David G. Rozzelle, CEO Cable Operations

By: David J. Large
David J. Large, Director of Engineering

ML Media Partners, L.P.
ML Media Opportunity Partners, L.P.

By: David Van Valkenberg /sm
David Van Valkenberg, CEO

January 20, 1994

Compatibility Between Cable Systems and Consumer Electronics Equipment
ET Docket No. 93-7 -- FCC No. 93-495

Attachment to Comments of Joint Filers, InterMedia Partners, ML Media Partners and ML Media Opportunity Partners

CableLabs
Cable Television Laboratories, Inc.

Customer Premises Equipment

Performance and Compatibility

CableLabs

Customer Premises Equipment

Performance and Compatibility

Testing

Including:

Characterization of the RF Environment

Testing Methodology, Procedures, and Results

Perceptibility Measurements

Supporting Appendices

Cable Television Laboratories, Inc.
1050 Walnut Street, Suite 500
Boulder, Colorado 80302
Phone: 303/939-8500
Fax: 303/939-9189

Table of Contents